Entergy

Entergy Operations, Inc.
1340 Echelon Parkway
Jackson, Mississippi 39213-8298
Tel 601-368-5758

F. G. Burford
Acting Director
Nuclear Safety & Licensing

CNRO-2004-00059

September 30, 2004

U. S. Nuclear Regulatory Commission
Attn.: Document Control Desk
Washington, DC 20555-0001

SUBJECT: Relief Request RBS-VRR-009 -
Relief from Inservice Testing Frequency

River Bend Station
Docket No. 50-458
License No. NPF-47

Dear Sir or Madam:

Pursuant to 10 CFR 50.55a(f)(5)(iii) and 10 CFR 50.55a(f)(6)(i), Entergy Operations, Inc. (Entergy) requests relief from the requirements of ASME Section XI pertaining to inservice testing (IST) of various check valves as detailed in Relief Request RBS-VRR-009 (see enclosure). Relief Request RBS-VRR-009 applies to River Bend Station. Entergy proposes to test the identified check valves on a frequency commensurate with the refueling outage frequency currently allowed by ASME Code OMa-10, but during the operating cycle.

Should you have any questions regarding this submittal, please contact Guy Davant at (601) 368-5756.

This letter contains no commitments.

Very truly yours,

FGB/GHD/ghd

Enclosure: Relief Request No. RBS-VRR-009

cc: (see next page)

A047

cc: Mr. W. A. Eaton (ECH)
Mr. J. P. DeRoy (ECH)
Mr. P. D. Hinnenkamp (RBS)

Dr. Bruce S. Mallett
U. S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011

NRC Senior Resident Inspector
P. O. Box 1050
St. Francisville, LA 70775

U.S. Nuclear Regulatory Commission
Attn: Mr. Michael K. Webb
MS O-7D1
Washington, DC 20555-0001

ENCLOSURE

CNRO-2004-00059

REQUEST FOR RELIEF
RBS-VRR-009

REQUEST FOR RELIEF
RBS VRR-009
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SYSTEM 057 – JRB – Containment and Drywell Air locks

Component Identification	Code Class	Code Category	Component Function
JRB-V1A	2	AC	REACTOR DOOR SEAL 1 AIR SUPPLY CHECK VALVE
JRB-V1B	2	AC	REACTOR DOOR SEAL 2 AIR SUPPLY CHECK VALVE
JRB-V1C	2	AC	REACTOR OUTER DOOR SEAL 3 AIR SUPPLY CHECK VALVE
JRB-V1D	2	AC	REACTOR OUTER DOOR SEAL 4 AIR SUPPLY CHECK VALVE
JRB-V1I	2	AC	INNER DOOR OUTER PRESSURE RELIEF CHECK VALVE
JRB-V1J	2	AC	INNER DOOR INNER PRESSURE RELIEF CHECK VALVE
JRB-V2A	2	AC	REACTOR DOOR SEAL 1 AIR SUPPLY CHECK VALVE
JRB-V2B	2	AC	REACTOR DOOR SEAL 2 AIR SUPPLY CHECK VALVE
JRB-V2C	2	AC	REACTOR OUTER DOOR SEAL 3 AIR SUPPLY CHECK VALVE
JRB-V2D	2	AC	REACTOR OUTER DOOR SEAL 4 AIR SUPPLY CHECK VALVE
JRB-V2I	2	AC	INNER DOOR OUTER PRESSURE RELIEF CHECK VALVE
JRB-V2J	2	AC	INNER DOOR INNER PRESSURE RELIEF CHECK VALVE

COMPONENT FUNCTION

JRB-V1A, B, C, and D, and JRB-V2A, B, C, and D are check valves that isolate the safety-related seal air system in the upper and lower primary containment personnel air locks from the non-safety-related make-up air piping/tubing supplied by the instrument air system. These valves are normally closed unless makeup air is being supplied to the seal air system. They have a safety function to close following the addition of makeup air. Since credit is not taken for the instrument air supply to the air locks after a seismic event, these valves do not have a safety-related function to open. These valves are considered Category A because the air lock seal air system meets the definition of a system for which valve seat leakage is limited to a specific maximum amount in the closed position for fulfillment of its required function.

These valves are being tested on an 18-month frequency in accordance with River Bend Station (RBS) Technical Specification (TS) Surveillance Requirement (SR) 3.6.1.2.4 and were last tested successfully as follows:

- JRB-V1A and B tested on October 8, 2003
- JRB-V1C and D tested on November 13, 2003
- JRB-V2A and B tested on March 25, 2004
- JRB-V2C and D tested on January 29, 2004

JRB-V1I and J and JRB-V2I and J are spring-loaded check valves that perform a safety-related pressure relief (open) function to prevent over-pressurizing the air lock barrel. They also have a closed safety function to prevent containment leakage into the air lock. These valves are considered Category C since they are self-actuating check valves, and also Category A since they perform a containment isolation function.

These valves are being tested in the open and closed directions in accordance with RBS TS SR 3.6.1.2.1 and the RBS Containment Leakage Rate Testing Program. (The Containment Leakage Rate Testing Program implements the requirements of 10 CFR 50 Appendix J.) They were last tested successfully in April, 2004.

APPLICABLE CODE EDITION and ADDENDA / REQUIREMENTS

Paragraph 4.3.2.2 of ASME/ANSI-1987 Edition, OMa-1988 Addenda, Part 10 (Reference 1) addresses exercising requirements. Specifically, Paragraph 4.3.2.2(e) states, "If exercising is not practicable during plant operation or cold shutdowns, it may be limited to full-stroke during refueling outages."

IMPRACTICALITY OF COMPLIANCE

Background

Entergy has determined that testing the identified check valves on a quarterly frequency during plant operation is not practical due to extensive test set-up time; therefore, they are currently tested on a refueling outage frequency in accordance with Paragraph 4.3.2.2(e) of OMa-10. Entergy's position is supported by Section 4.1.4 of NUREG-1482, *Guidelines for Inservice Testing at Nuclear Power Plants* (Reference 2), which states, "The NRC has determined that the need to set up test equipment is adequate justification to defer backflow testing of a check valve until a refueling outage."

Burden caused by Compliance

Upon further investigation and pursuant to 10 CFR 50.55a(f)(5)(iii), Entergy has determined that testing the identified check valves during refueling outages is impractical due to ingress and egress restrictions placed on personnel traffic through the air lock. Specifically, testing during refueling outages would impede the flow of personnel and equipment into and out of containment as the opposite air lock door would be locked closed if performed when containment is required. If performed at times during the refueling outage when containment

is not required, flow would also be impeded due to the air lock being roped off for testing.

Testing valves JRB-V1A – D and JRB-V2A – D requires isolation and partial disassembly of the air lock seal air system to monitor for leakage upstream of the check valves. Testing these valves is performed by:

1. Removing door cover plates to gain access to internal door components,
2. Connecting a temporary air supply and a volumetric leakage rate monitor (VLRM) to the downstream side of each valve,
3. Pressurizing the boundary, and
4. Monitoring the VLRM for leakage.

Testing valves JRB-V1I and J and JRB-V2I and J requires removing the air locks from service individually and administratively controlling the unopened door for each air lock. Testing these valves in the open direction is performed by:

1. Connecting a temporary air supply and a VLRM to the upstream side of the valves and
2. Measuring the pressure required to achieve flow through the valves.

Testing these valves in the closed direction is performed by:

1. Connecting a temporary air supply and a VLRM to the downstream side of each valve,
2. Opening an upstream vent and plugging the downstream of the valves, and
3. Pressurizing the boundary and monitoring the VLRM for leakage.

Based on review of test history, testing these valves on a single air lock door can be accomplished in approximately 18 to 24 hours, thereby, requiring up to 48 hours to test each air lock and impeding personnel traffic into and out of containment for that period of time. This time is doubled to 96 hours for testing both air locks.

PROPOSED ALTERNATIVE AND BASIS FOR USE

Proposed Alternative

Entergy proposes an alternative testing frequency for performing inservice testing for the valves identified above. Specifically, Entergy proposes to test the identified check valves on a frequency commensurate with the refueling outage frequency currently allowed by Paragraph 4.3.2.2(e) of ASME/ANSI OMa-10, but during the operating cycle.

Basis

As more system outages are performed on-line, it is evident that the inservice testing described above could be performed during system outages while the plant is operating without sacrificing the level of quality or safety. System outages are determined and scheduled in accordance with 10 CFR 50.65(a)(4). The tests to satisfy TS SR 3.6.1.2.1 and

SR 3.6.1.2.4 are currently performed on-line. The proposed inservice testing can be performed during these system outages. The proposed alternative would permit testing on an operating cycle frequency in lieu of a refueling outage frequency. The following points justify performing this testing at a frequency of at least once each operating cycle:

1. Inservice testing performed on a refueling outage frequency is currently acceptable in accordance with ASME/ANSI OMa-10. By specifying testing activities on a frequency commensurate with each refueling outage, OMa-10 recognizes and establishes an acceptable time period between testing. Historically, the refueling outage has provided a convenient and defined time period in which testing activities could be safely and efficiently performed. However, the acceptable time period between testing activities may be maintained separate from the refueling outage milestone. Inservice testing performed on a frequency that maintains the acceptable time period between testing activities during the operating cycle is consistent with the intent of OMa-10.

2. 10 CFR 50.65(a)(4) requires licensees to assess and manage the increase in risk that may result from proposed maintenance activities. Entergy complies with the requirements of §50.65(a)(4) at RBS via the application of a program governing maintenance scheduling. This program dictates the requirements for risk evaluations as well as the necessary levels of action required for risk management in each case. The program also controls operation of the on-line risk monitoring system, which is based on the RBS probabilistic risk assessment (PRA). In addition, this program provides methods for assessing risk of maintenance activities for components not directly in the RBS PRA model. With the use of risk evaluation for various aspects of plant operations, Entergy has initiated efforts to perform additional maintenance, surveillance, and testing activities during normal operation. Planned activities are evaluated utilizing risk insights to determine the impact on safe operation of the plant and the ability to maintain associated safety margins. Individual system components, a system train, or a complete system may be planned to be out of service to allow maintenance, or other activities, during normal operation.

   Testing on-line will involve opening the inside or outside containment air lock door, which requires entry into a TS Limited Condition for Operation (LCO) REQUIRED ACTION statement. The action requires that the OPERABLE air lock door be closed and locked. The procedures currently contain steps to ensure the door <u>not</u> being tested is locked closed prior to testing, thereby maintaining containment integrity. Hence, the testing activity does not increase the risk of a breach of containment.

   RBS currently performs on-line maintenance and testing on the containment air lock doors, which includes tasks such as testing the seals, inspecting, lubricating and testing the interlocks, and testing and inspecting the seal air system components. These activities are performed on a single door at a time while the opposite door is locked closed under administrative controls. Therefore, these activities have no impact on the overall OPERABILITY of the affected air lock since a single closed door is sufficient to provide a leak tight barrier following postulated events.

Based on review of testing history, testing the seal air system on a single door can be accomplished in approximately 18 to 24 hours. Inservice testing JRB-V1A - D, and JRB-V2A – D, as applicable, is included in this timeframe. Additionally, the air lock leakage rate test is performed on a single door at a time and can be accomplished in approximately 18 to 24 hours per door. Testing JRB-V1I and J, and JRB-V2I and J, as applicable, is included in this timeframe. Therefore, because these activities are currently performed on-line to satisfy TS surveillance requirements, crediting them with satisfying IST requirements would change neither the duration of the on-line testing activities, nor the core damage probability (CDP) associated with the containment air lock on-line testing activities. For these reasons, the risk/CDP over the entire operating/shutdown spectrum would remain unchanged.

Risk associated with on-line maintenance/testing activities is controlled through the work control process. This process includes preventive measures for maintaining safety and minimizing risk while performing on-line maintenance/testing such as:

a. Assessing work activities by multiple independent personnel to ensure work activities in one system do not affect the ability of redundant systems or trains to perform their safety functions.

b. Establishing redundant systems or trains as "protected", so that these systems are less likely to be inadvertently made INOPERABLE while they are being credited to operate during the period that another safety system is out of service.

c. Providing additional management oversight for significant maintenance activities being conducted while in TS LCO REQUIRED ACTION statements.

d. Conducting shift briefings to ensure that personnel are aware of active TS LCO REQUIRED ACTION statements.

e. Using human performance tools including pre-job briefings, self-checking, and peer-checking to reduce or eliminate human errors.

The level of quality associated with IST activities is independent of whether the activity is performed on-line or during an outage. The same personnel, procedures, and acceptance criteria are used in either case. The safe conduct of maintenance and IST activities is built into the RBS work control process.

3. Over time, the same number of tests would be performed using the proposed operating cycle test frequency as would be performed at the current refueling outage frequency. Thus, IST activities performed at the proposed operating cycle test frequency provide an equivalent level of quality and safety as IST activities performed on a refueling outage frequency.

CONCLUSIONS

10 CFR 50.55a(f)(5)(iii) states:

> "If the licensee has determined that conformance with certain code requirements is impractical for its facility, the licensee shall notify the Commission and submit, as specified in §50.4, information to support the determination."

10 CFR 50.55a(f)(6)(i) states:

> "The Commission will evaluate determinations under paragraph (f)(5) of this section that code requirements are impractical. The Commission may grant relief and may impose such alternative requirements as it determines is authorized by law and will not endanger life of property or the common defense and security and is otherwise in the public interest giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility."

Entergy believes the current requirement for testing the identified valves during a refueling outage is impractical. Entergy also believes that the proposed alternative testing frequency of at least once during each operating cycle in lieu of once during each refueling outage provides:

1. Reasonable assurance that the valves described herein are operationally ready, and

2. An acceptable level of quality and safety in that the proposed frequency is consistent with that allowed by ASME OMa-10 for performing inservice testing of valves.

Therefore, Entergy requests that the NRC staff grant relief from the scheduling requirements of ASME/ANSI OMa-10, Paragraph 4.3.2.2(e) and authorize the proposed alternative frequency of testing as described above pursuant to 10 CFR 50.55a(f)(6)(i).

DURATION OF PROPOSED ALTERNATIVE

The duration of this alternative testing frequency is requested until December 2007, at which time RBS is scheduled to update to a later edition of ASME Section XI.

REFERENCES

1. ASME/ANSI OMa-1988, Part 10, *Inservice Testing of Valves in Light-Water Reactor Power Plants*

2. NRC NUREG-1482, *Guidelines for Inservice Testing at Nuclear Power Plants*, dated April, 1995